

ATTACHMENT A

Electronic Acknowledgement Receipt

EFS ID:	1149968
Application Number:	10628133
Confirmation Number:	4516
Title of Invention:	FUNCTION EXECUTION METHOD, FUNCTION EXECUTION APPARATUS, COMPUTER PROGRAM AND RECORDED MEDIUM
First Named Inventor:	Akishige Yamamoto
Customer Number:	7278
Filer:	Jay Philip Lessler/Nancy Joyce Simmons
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Attorney Docket Number:	04970/000N023-US0
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International Application Number:	

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Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1		00822191.PDF	101128	yes	6

	Multipart Description		
	Doc Desc	Start	End
	Information Disclosure Statement (IDS) Filed	1	3
	NPL Documents	4	4
	NPL Documents	5	5
	NPL Documents	6	6

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

Dated: _____

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Farrokh HASHEM

**For: FUNCTION EXECUTION METHOD,
FUNCTION EXECUTION APPARATUS,
COMPUTER PROGRAM AND RECORDED
MEDIUM**

{W:\04970\000N023000\00837282.DOC 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 }

The listed references have been cited in an Office Action mailed December 13, 2005 by the Japanese Patent Office in corresponding Japanese Application No. 2002-575788. The JPO Office Action, and its English language translation have already been provided in the previous IDS. The references cited in the JP Office Action, and a concise explanation in the English language have also already been submitted during prosecution of the present application. Applicant submits herewith English language translations of portions of three references relied on by the Japanese Patent Office in its December 13, 2005 Office Action.

These translations were requested by the present Examiner during his consideration of the previous Information Disclosure Statement. It is submitted that this Information Disclosure Statement is in compliance with 37 C.F.R. §§ 1.97 and 1.98, and the Examiner is respectfully requested to consider the listed references. Applicants submit that the present IDS does not need to be accompanied by a fee. However, the Commissioner is authorized to charge any deficiency of up to \$300.00 or credit any excess in this fee to Deposit Account No. 04-0100.

Early and favorable consideration is requested.

Dated: August 25, 2006

Respectfully submitted,

By / Richard J. Katz /
Richard J. Katz
Registration No.: 47,698

DARBY & DARBY P.C.
P.O. Box 5257
New York, New York 10150-5257
(212) 527-7700
(212) 527-7701 (Fax)
Attorneys/Agents For Applicants

Application Serial No. 10/628,133

- 2 -

Docket No. 04970/000N023-US0

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Substitute for form 1449A/B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Complete if Known	
				Application Number	10/628,133-Conf. #4516
				Filing Date	July 25, 2003
				First Named Inventor	Akishige Yamamoto
				Art Unit	2187
				Examiner Name	H. Farrokh
				Attorney Docket Number	04970/000N023-US0
Sheet	1	of	1		

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶

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NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	CA	English Language translation of Japanese Patent Appln. No. 60-8944, page 1, lower right column, line 20 to upper left column, line 1 and page 3, upper left column, lines 8-19	
	CB	English Language translation of Kawai et al. "The Design and Implementation High Performance and Portable Java Virtual Machine", Research Report of Information Processing Society, vol. 98, no. 15, pp. 25-30 (February 26, 1998), page 25, left column.	
	CC	English Translation of Ishizaki et al. "Design, Implementation and Evaluation of Optimizations in a Java Just-In-Time Compiler", Research Report of the institute of Electronics Information and Communication Engineers, vol. 99, no.252, pp. 17-24 (August 5, 1999), page 20, left column	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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Japanese Patent Application Laid-Open No. 60-8944

a) page 1, lower right column, line 20 to upper left column, line 1;

In SUBR functions, a user generally writes a program in a high-level language, which is then compiled into machine language.

b) page 3, upper left column, lines 8-19

Next will be described tail recursion calls, which the present invention specifically relates to.

In functional languages, as described above, work proceeds by having individual functions call other functions. In the case of the final function call, no operations are performed after returning so there is no need to save PC or MPC and there is no need to create a frame for the function to be called. As a result, the frame of the current calling function is used to make the function call. This is generally referred to as a tail recursion call. This makes it possible to skip the operations of creating a frame and destroying a frame, thus improving execution speed.

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Ishizaki et al. "Design, Implementation and Evaluation of Optimizations in a Java Just-In-Time Compiler", Research Report of the Institute of Electronics, Information and Communication Engineers, vol. 99, no. 252, pp. 17-24 (August 5, 1999):

a) page 20, left column

6. Optimizing method calls

This chapter describes examples of ways to optimize method calls: in-line expansion of static method calls and de-virtualization of dynamic method calls.

6.1 In-line expansion of static method calls

Programs in object-oriented languages generally involve a large number of calls to small methods. Furthermore, when a new class instance is created, a constructor is called. In order to reduce the overhead for these static method calls, in-line expansion for method calls is performed. As a result, more optimization can be performed within methods.

Furthermore, by replacing tail recursion with a jump instruction to the start of the method, optimization can be performed on a recursive call by expanding the method body once.

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